

## CLAIMS

1. A normal mode noise suppressing circuit for suppressing normal mode noise that is transmitted through a first conductor line and a second conductor line and that creates a potential difference between the conductor
- 5 lines, the noise suppressing circuit comprising:
- at least one noise suppressing section suppressing normal mode noise;
  - and
  - at least one capacitor for suppressing noise having an end connected to the first conductor line and the other end connected to the second conductor
- 10 line, wherein:
- the at least one noise suppressing section incorporates: a first detection/injection section and a second detection/injection section that are connected to the first conductor line at different points and that each perform detection of a signal corresponding to normal mode noise or injection
- 15 of an injection signal for suppressing normal mode noise; and an injection signal transmission path that connects the first and second detection/injection sections to each other through a path different from the first and second conductor lines and that transmits the injection signal;
- when the first detection/injection section performs the detection of the
- 20 signal corresponding to the normal mode noise, the second detection/injection section injects to the first conductor line the injection signal generated based on the signal detected; and
- when the second detection/injection section performs the detection of the signal corresponding to the normal mode noise, the first
- 25 detection/injection section injects to the first conductor line the injection signal generated based on the signal detected.

2. The normal mode noise suppressing circuit according to claim 1,  
wherein the at least one noise suppressing section is one in number, the at  
least one capacitor for suppressing noise is two in number, the two being  
located at different points, and the noise suppressing section is located  
5 between the two capacitors for suppressing noise.

3. The normal mode noise suppressing circuit according to claim 1,  
wherein the at least one noise suppressing section is two in number, the two  
being located at different points, the at least one capacitor for suppressing  
10 noise is one in number, and the capacitor for suppressing noise is located  
between the two noise suppressing sections.

4. The normal mode noise suppressing circuit according to claim 1,  
wherein the at least one noise suppressing section is two in number, the two  
15 being located at different points, the at least one capacitor for suppressing  
noise is two in number, the two being located at different points, and the  
noise suppressing sections and the capacitors for suppressing noise are  
alternately located.

20 5. The normal mode noise suppressing circuit according to claim 1,  
wherein the first detection/injection section incorporates: a first inductance  
element inserted to the first conductor line at a specific first point; and a  
second inductance element coupled to the first inductance element, and  
wherein:  
25 the injection signal transmission path includes a capacitor for detection  
and injection that allows the injection signal to pass; the injection signal

transmission path has an end connected to the first conductor line at a second point different from the first point and the other end connected to the second conductor line; the second inductance element is inserted somewhere along the injection signal transmission path; and a node between the  
5 injection signal transmission path and the first conductor line forms the second detection/injection section.

6. The normal mode noise suppressing circuit according to claim 5,  
wherein the at least one noise suppressing section further incorporates a  
10 peak value reducing section that is provided between the first and second detection/injection sections on the first conductor line and that reduces a peak value of the normal mode noise.

7. The normal mode noise suppressing circuit according to claim 1,  
15 wherein the first detection/injection section incorporates: a first inductance element inserted to the first conductor line at a specific first point; a second inductance element coupled to the first inductance element; a third inductance element inserted to the second conductor line at a point corresponding to the first point; and a fourth inductance element coupled to  
20 the third inductance element, and wherein:

the injection signal transmission path includes a capacitor for detection and injection that allows the injection signal to pass; the injection signal transmission path has an end connected to the first conductor line at a second point different from the first point and the other end connected to the  
25 second conductor line at a point corresponding to the second point; the second and fourth inductance elements are inserted in series somewhere

along the injection signal transmission path; and a node between the injection signal transmission path and the first conductor line and a node between the injection signal transmission path and the second conductor line form the second detection/injection section.

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8. The normal mode noise suppressing circuit according to claim 7, wherein the at least one noise suppressing section further incorporates a peak value reducing section that is provided between the first and second detection/injection sections on the first and second conductor lines and that  
10 reduces a peak value of the normal mode noise.